CITY OF NEWARK
DELAWARE

BIDDER _____

BID SECURITY _____

CITY OF NEWARK
Delaware

CONTRACT NO. 18-06

# PURCHASE OF NINE (9) 12Kv SOLID DIELECTRIC, TRIPLE OPTION RECLOSERS

NOTICE
Do not disassemble. Return intact with properly completed forms or bid may be rejected.

CITY OF NEWARK
Delaware

CONTRACT NO. 18-06

PURCHASE OF NINE (9) 12KV SOLID DIELECTRIC, TRIPLE OPTION RECLOSERS

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CITY OF NEWARK
Delaware

CONTRACT NO. 18-06

PURCHASE OF NINE (9) 12KV SOLID DIELECTRIC, TRIPLE OPTION RECLOSERS

NOTICE OF LETTING

Sealed bids for Contract No. 18-06, Purchase of Nine (9) 12kv Solid Dielectric, Triple Option Reclosers, will be received in the Purchasing Office, Newark Municipal Building, 220 South Main Street, Newark, Delaware, 19711, Newark, Delaware until 2 p.m., prevailing time, Tuesday, August 14, 2018 and will be publicly opened and read aloud in the Council Chamber shortly thereafter.

Copies of the contract documents may be obtained by each prospective bidder on the City's website at www.newarkde.gov/bids.aspx.

CITY OF NEWARK
Delaware

CONTRACT NO. 18-06

PURCHASE OF NINE (9) 12Kv SOLID DIELECTRIC, TRIPLE OPTION RECLOSERS

GENERAL PROVISIONS

1. BIDS

Each bid shall be submitted on the proposal form included herein. The proposal and all other required documents must be submitted in a sealed envelope clearly identified with the bidder's name and marked, "City of Newark - Contract No. 18-06, Purchase of Nine (9) 12kv Solid Dielectric, Triple Option Reclosers, and will be received in the Purchasing Office, 220 South Main Street, Newark, Delaware, 19711 until 2 p.m., prevailing time, Tuesday, August 14, 2018. Each bid so submitted shall constitute an irrevocable offer for a period of sixty (60) days following the bid opening date.

2. TAXES

The bid price shall not include federal or state taxes. If applicable, the bidder shall furnish the City with the necessary tax exemption forms in triplicate upon submission of his invoice.

3. BID SECURITY

No bid will be considered unless accompanied by a certified check, cashier's check or bid bond in the amount of five percent (5%)of the bid. If a bid bond is submitted, it must be made out on the attached "Bond to Accompany Proposal" form. The successful bidder, upon his failure or refusal to execute and deliver the contract within ten (10) days after he has received notice of acceptance of his bid, shall forfeit to the City for such failure or refusal, the security deposit with his bid.

4. AWARDS

Following review of all bids by the City Manager and the subsequent recommendation to the Mayor and Council, awards, if any, will be made to the lowest responsible bidder. The Mayor and Council reserve the right to reject any or all bids and to waive minor irregularities and defects in form where the best interests of the City would be served. The City reserves the right to divide the award of the contract into each of the parts designated in the specifications and proposal.

5. CONTRACT SURETY BOND

A contract surety bond satisfactory to the City of Newark and in the full amount of the contract may be required by the successful bidder within ten (10) days of the contract award date. Upon receipt of this surety bond, the City will return any certified or cashier's check submitted as bid security.

6. DELIVERY

Delivery shall be F.O.B. City of Newark Warehouse, Phillips Avenue, Newark, Delaware. The successful bidder shall include the type and serial number of all equipment on invoices and packing slips.

7. INSPECTIONS

All equipment shall be subject to final inspection. If, in any way, an item fails to meet the terms of the contract, it may be rejected or liquidated damages charges made. The decision of the City will be final and any rejected items or material will have to be replaced at the expense of the bidder.

8. INTENT OF SPECIFICATIONS

It shall be the bidder's responsibility to furnish the equipment specifically indicated in these specifications and such other as may be required.

9. REGULATIONS AND EXCEPTIONS

Any and all exceptions which are taken to the specifications shall be noted on the Proposal form. The listing of an exception may be grounds for rejection. All equipment must meet all applicable federal or state regulations.

10. STANDARDS AND MANUFACTURER'S WARRANTY

All equipment will be unused in all component parts and will be the latest current production including all accessories. The specifications will be construed as the minimum required. When the manufacturer's standards exceed these, the standard units will be furnished. All material will be free of defects. Manufacturer's standard warranties shall apply.

11. WORKMANSHIP

Workmanship shall conform to the best current manufacturing practice followed for equipment of the type. Component parts and

units will be manufactured to definite standard dimensions, with proper fits and clearances.

12. ADVERTISEMENT

It is further agreed that any bidder submitting a bid will not use the name of the City in any advertisement without first obtaining the written consent of the City Manager.

13. EEO AND LICENSING

The bidder shall possess all business and other licenses required by the State of Delaware and also be a fair and equal opportunity employer.

14. NON-COLLUSION

The vendor shall not, either directly or indirectly, enter into any agreement, participate in any collusion, or otherwise take any action in restraint of free competitive bidding in connection with the contract.

15. INQUIRIES AND ADDENDA

Any inquiries regarding the bidding process shall be directed to Mr. Mark Brainard, Assistant to the Managers, at 302-366-7000. Any questions regarding the specifications shall be directed to Mr. Bhadresh Patel, Director of the Electric Department at 302-366-7000 x 2085. Any changes to the contract documents shall be made only by numbered addendum(a) issued not later than four (4) days prior to the date set for bid opening. Prospective bidders shall bear the entire responsibility for being sure they have received any and all such addenda.

16. DAMAGES FOR LATE DELIVERY

The dates for delivery of the equipment are important and may influence the award of the contract. Submitted delivery dates shall be calculated from the date of notification of award. Liquidated damages of $25.00 per calendar day may be assessed by the City, at its discretion, for every day that delivery is extended beyond the submitted delivery date.

17. PAYMENT

Payment shall be made within thirty (30) days from receipt of the equipment, subject to final inspection and acceptance of the items by the City.

18. TERMINATION OF AGREEMENT

This agreement may be terminated by the City upon thirty (30) days written notice if the contractor fails to perform satisfactorily in accordance with the terms and conditions of the contract. In the event this agreement is terminated, the contractor shall be paid for services satisfactorily rendered up to the termination date.

19. INDEMNIFICATION & OWNERSHIP OF MATERIAL

The contractor shall solely be responsible and liable for the accuracy and completeness of all work performed and shall agree to indemnify, defend and hold harmless the City of Newark, its officers, agents and employees, from and against any and all claims, actions, suits and proceedings arising out of, based upon or caused by negligent acts, omissions or errors of or the infringement of any copyright of patent, by the contractor, its officers, agents, employees or subcontractors, in the performance of the contracted agreement.

All documents prepared and submitted pursuant to this RFP or contract shall be the property of the City upon submittal and will be subject to staff and public review and discussion in association with our public bidding and formal proposal process. Any information or documents deemed proprietary shall be so marked at time of submittal and limited to detail where the disclosure of contents could be prejudicial to competing offerors during the process of negotiation, and any commercial or financial information of a privileged or confidential nature.

CITY OF NEWARK
Delaware

CONTRACT NO. 18-06

PURCHASE OF NINE (9) 12KV SOLID DIELECTRIC, TRIPLE OPTION RECLOSERS

TECHNICAL SPECIFICATIONS

## 1. SCOPE OF WORK

The project involves providing a Distribution Automation (DA) System with Fault Detection, Isolation and Restoration (FDIR) capabilities for the auto-restoration of the City's 12.47kV distribution system. The work generally includes but is not limited to:

1. Provide maser station licensed frequency radio communication system(s).

2. Provide 12.47kV automatic, circuit reclosers complete with controller, instrument transformers, and pole-mounting hardware complete and ready for installation by the Owner.

## 2. MATERIALS AND EQUIPMENT, STANDARDS OF QUALITY

Materials and equipment as specified shall in all cases be understood as the quality standard for base bidding. Where trade name, manufacturer's name or catalog reference is listed in the specifications or on the drawings, such designations have been made to establish a minimum quality required by the Contract Documents.

## 3. STANDARD SPECIFICATIONS AND CODES

Where mentioned herein, standard specifications and codes refer to latest issues available and in effect at the bid date, including current addenda.

Whenever any product is specified in accordance with a Federal Specification, an ASTM Standard, or other Association Standard, the Contractor shall, upon request, present an affidavit from the manufacturer certifying that the product complies with the respective standard specification. Where specified or requested, supporting test data shall be submitted to substantiate compliance.

**4. INSPECTION AND/OR TESTING**

a) All materials and workmanship shall be subject to inspection, examination, or test by the Owner and the Engineer at any and all times during construction. The Owner shall have the right to reject defective material and workmanship or require its correction. Unacceptable workmanship shall be satisfactorily corrected. Rejected material shall be promptly segregated and removed from the Project Area and replaced with material of specified quality without charge therefor. If the Contractor fails to proceed at once with the correction of rejected workmanship or defective material, the Owner may, by contract or otherwise, have the defects remedied or rejected materials removed from the Project Area and charge the cost of the same against any monies which may be due the Contractor, without prejudice to any other rights or remedies of the Owner.

**5. SHOP DRAWINGS**

Shop drawings and other equipment documentation shall be as defined in applicable general and technical specification sections.

**6. DELIVERY AND IMPLEMENTATION COORDINATION**

Contractor shall coordinate all delivery and system implementation activities with the Owner's Electric Department and the Engineer.

**7. OWNERSHIP OF MATERIAL**

All documents prepared and submitted pursuant to this RFP or contract shall be property of the City upon submittal and will be subject to staff and public review and discussion in association with our public bidding and formal proposal process. Any information or documents deemed proprietary shall be so marked at time of submittal and limited to detail where the disclosure of contents could be prejudicial to competing offerors during the process of negotiation, and any commercial or financial information of a privileged or confidential nature.

**Summary of Work**

**PART 1- GENERAL**

## 1.1 PROJECT DESCRIPTION

1.1.1 The project involves the procurement of Distribution Automation (DA) system that will provide Fault Detection Isolation and Restoration (FDIR) for the City of Newark 12.47kV distribution system.

1.1.2 The Owner shall be responsible for the installation of: the pole-mounted field equipment including the reclosers, remote radio units (antenna); master radio unit(s) including LAN fiber optic cables(s).

1.1.3 This specification covers the requirements for an electronically controlled, solid dielectric vacuum recloser with Triple Option trip/close capabilities for use on distribution systems through 15 kV.

## 1.2 WORK INCLUDED

The City of Newark (City) shall provide the installation of the field equipment furnished by the Contractor as part of this Contract. The work consists of, but is not limited to the following:

1.2.1 Provide a complete system radio path study and radio communication system design to allow for reliable communication between the master station(s) and remote stations.

1.2.2 Furnish nine (9) 15kV circuit reclosers complete with recloser controller, instrument transformers, and arranged for pole mounting.

1.2.3 Furnish nine (9) complete remote radio systems for installation at the recloser sites. Radio systems shall be integrated within the recloser control cabinet.

1.2.4 Furnish a minimum of one (1) master radio base station with Ethernet connectivity to the Owner’s local area network. Exact number of master stations shall be determined by the path study.

## 15,000 VOLT VACUUM CIRCUIT RECLOSERS

### PART 1- GENERAL

1.1 APPLICABLE PUBLICATIONS

A. Unless modified by these specifications, all material furnished shall conform to the latest standards of the following: American National Standards Institute (ANSI); American Society for Testing and Materials (ASTM); Institute of Electrical and Electronic Engineers (IEEE); National Electrical Manufacturers Association (NEMA); National Fire Protection Association (NFPA); and Underwriters Laboratory (UL).

B. This specification covers the requirements for an electronically controlled, solid dielectric vacuum recloser for use on a 12.47kV system and rated at 15kV. The complete operating recloser consists of the high voltage switching mechanism unit working in conjunction with a control cable coupled electronic control unit.

### PART 2- PRODUCTS

1.1 RECLOSER MANUFACTURERS

A. Subject to compliance with requirements, provide products by one of the following:
   1. ABB
   2. Cooper Industries, Inc.
   3. G&W Electric Company
   4. Siemens Industry, Inc.

1.2 RECLOSER CONTROLLER MANUFACTURERS

A. Subject to compliance with requirements, provide products by one of the following:
   1. Schweitzer Engineering Laboratories, Inc. (SEL).

1.3 RECLOSER CONFIGURATION

A. Nine (9) complete recloser assemblies shall be furnished under this Specification consisting of the high voltage switching mechanism unit and the operating control unit connected via a control

cable including various accessories to function as a Fault Detection Isolation and Restoration (FDIR) based monitoring and operating system. Eight (8) reclosers will be installed and one complete recloser will be a system spare unit.

B. The monitoring and FDIR operated electronic scheme will be provided in accordance with Section 409001 of this Specification.

C. Recloser configuration shall be horizontal, pole-mount center.

D. Recloser 120VAC control power shall be provided by the Owner from external potential source(s).

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: The chosen manufacturer shall have at least 10 years' experience in manufacturing solid dielectric reclosers. The manufacturer of the reclosers shall be completely and solely responsible for the performance of the reclosers as well as the complete integrated assembly as rated.

B. The manufacturer shall furnish certification of ratings of the reclosers upon request.

C. The recloser shall comply with requirements of the latest revisions of applicable industry standards, including:

(a) American National Standards Institute (ANSI)
(b) American Society for Testing and Materials (ASTM)
(b) National Electrical Manufacturers Association (NEMA)
(c) National Fire Protection Association (NFPA); and Underwriters Laboratory (UL)
(d) IEEE C37.60
(e) IEEE 386

D. The recloser manufacturer shall be ISO 9001:2008 and ISO 14001:2004 certified.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Reclosers shall be shipped preassembled at the

factory. No field assembly shall be required.

B. The contractor, if applicable, shall handle, transfer and move the reclosers in accordance with manufacturer's recommendations.

1.6 RECLOSER CONFIGURATION

Recloser configuration shall be:

- Site-ready with options including lightning arresters, primary/secondary connections, Accusense voltage sensors, and voltage transformers preassembled.
- Pole mount, Cross Arm, center

1.7 RECLOSER CONFIGURATION

A. Mechanism Enclosure

- The magnetic actuator and corresponding linkage assembly shall be housed within an air insulated enclosure with appropriate venting. A contact position indicator shall be provided visible from the ground when the recloser mechanism is mounted at operating height. Lifting provisions shall be provided.
- The recloser shall be electrically trip free. Any applied close signal shall not inhibit the recloser from tripping on the programmed time-current curve.
- The manual trip and lockout handle (ring) shall be made of stainless steel for maximum corrosion resistance. A mechanical block device shall further prohibit accidental closing when the manual trip handle is used.
- The recloser shall include **Cooper URT0905-0A1A-1B1A** lightning arresters to the recloser tank; three (3) on the source side and (3) on the load side.

B. Operating Mechanism

- The operating mechanism shall utilize a magnetic actuator for opening and closing of the vacuum interrupters. The magnetic actuator shall be powered by capacitors located in the control

enclosure. The design of the recloser shall permit 500 open and close operations after loss of primary control voltage for dead line operation.

- The reclosers shall contain no high voltage closing coils. The recloser shall be capable of operating fully from an external 120 VAC source and include a GFI duplex receptacle. The external 1.0 KVA oil potential transformer for 120VAC source with hardware to mount on standard aluminum frame shall be supplied with the recloser.
- Vacuum interrupter contact position indication shall be accomplished using green (Open) and red (closed) indicators located on the bottom of mechanism enclosures and through LEDs located in the control.

C. Vacuum Interrupters

Interruption of the fault or load current shall be accomplished through vacuum interrupters located inside the solid dielectric modules. The use of SF6 or oil is prohibited.

D. Solid Dielectric Modules

The solid dielectric modules shall utilize an epoxy solid dielectric insulation to fully encapsulate each of the three vacuum interrupters. The solid dielectric modules shall be fully shielded and incorporate a high impact poly-carbonate, track resistant, UV stable covering. The modules shall be dead tank or dead front technology and shall conduct a fault to ground through their external surface in case of a flash over. The operating temperature shall be -40° to + 55° C.

a. Current Transformers

A dual ratio, 500/1000:1 current transformer shall be integrally molded into each module on each side. CT accuracy shall be +/- 1%. The current transformer shall be protected by a CT clamping circuit internal to the recloser to minimize the possibility of hazardous voltage entering the control compartment or exposed due to the control cable being disconnected.

b. Voltage Sensors

One capacitive style voltage sensors shall be integrally molded into each module on each side, IEEE 386 bushing interface. Voltage sensing accuracy shall be +/- 2% over the temperature range -20°C through +40°C. The accuracy shall be +/- 4% at -40°C through +55°C. The phase angle accuracy of the voltage sensors shall be +/- 1%.

E. Smart Grid / Lazer Automation

The recloser shall be automation ready simplifying conversion for any future automation requirements. Up to 6 optional LEA (Low Energy Analog) capacitive voltage sensors shall be encapsulated within each recloser module permitting voltage reading for network reconfiguration while eliminating the need for add-on external sensors and cabling. A multi-ratio current transformer shall be encapsulated within the module. The current transformer shall be field chargeable. CT accuracy shall be +/-1%. Capacitive style voltage sensors shall be encapsulated within each recloser module permitting voltage reading for network reconfiguration while eliminating the need for add-on sensors and cabling. Voltage sensing accuracy shall be +/-2% over the temperature range -20°C through +40°C when tested as a system. The accuracy shall be +/-4% at -60°C through +65°C. The phase angle accuracy of the voltage sensors shall be +/-1°. Available communications include fiber optic transceivers and wireless radio.

F. Finish Requirements

The recloser tank shall be painted Munsell Notation 5BG7.0/0.4, ANSI 70 Gray. The coating system shall meet or exceed IEEE Std C57.12.31 2010 standard coating system requirements for pole-mount equipment.

1.8 DESIGN RATINGS

A. Reclosers

The reclosers shall have the minimum design ratings:

| | |
|---|---|
| Maximum Design Voltage | 15kV |
| Nominal Operating Voltage | 12.47kV |
| Impulse Level (BIL) | 110kV |

| | |
|---|---|
| 8-hour Overload, | 630 A |
| 60 Hertz Withstand Voltage (Dry, one minute) | 50kV |
| (Wet, ten seconds) | 45kV |
| Continuous and load break Current | 800 A |
| Symmetric Interrupting Current | 12,500 A |
| Making current: RMS, asym, | 20,000 A |
| Making Current: Peak, asym, | 32,000 A |
| Short Circuit Current, 3 seconds | 12,500 A |
| Mechanical Endurance, Operations | 10,000 |

B. IEEE C37.60 Fault Interrupting Duty

| Percent of Maximum: Interrupting | Approx. Interruptin g: Current | No. of Fault: Interrupt |
|---|---|---|
| 15-20% | 2000 | 44 |
| 45-55% | 6000 | 56 |
| 90-100% | 12000 | 16 |
| Total Number of Fault Interruptions: 116 | | |

1.9 MOUNTING FRAME

A. A galvanized steel frame that includes all provisions for wood pole-mounting of the recloser, lightning arresters, control power transformers and other accessories shall be furnished for each recloser.

1.10 ELECTRONIC RECLOSER CONTROLLER/RELAY

The recloser control shall be Schweitzer Engineering Laboratories, Inc (SEL).

A. Recloser Controller/Relay

- The recloser control shall be the manufacturers most current model and shall be automation ready for installation in an FDIR System. Communications will be wireless radio.
- The recloser control shall include extensive system protection functionality, including ANSI

phase, ground and negative sequence overcurrent protection, over/under frequency, over/under voltage, sensitive ground fault, directionality, and synchronism check.

- Analysis tools shall include fault locating, event recording and oscillography functions.
- Metering functions shall include demand and instantaneous current on a per phase basis, instantaneous voltage and power factor on a per phase basis and power (real, reactive, apparent) on a per-phase or total basis.
- Harmonics shall be provided on a per phase basis.
- Symmetrical components for both voltage and current shall be displayed along with kilowatt-hours for energy metering.
- Controller shall communicate via DNP 3.0 protocol and be capable of upgrade to IEC 61850.
- Communications shall be digital and arranged to be compatible with the provided radio interface. Provide with serial and Ethernet communication ports.
- Controller shall be furnished with all modules for future fiber optic Ethernet communications.
- Control parameters shall have the ability to be programmed via a personal computer (PC) connected to the control through a front panel RS-232 port.
- Provide a full version of programming software and any special interface cables and/or connectors.

B. Recloser 120VAC controller power shall be provided by the external potential source(s).

## PART 3 - SHOP DRAWINGS, CORRESPONDENCE, SHIPMENT AND WARRANTY

3.1 SHOP DRAWINGS AND MANUFACTURER'S DATA

A. Submit electronic PDF copy of shop drawings and

manufacturer's data for each item within six (6) weeks after receipt of the Notice to Proceed. This information shall include the following:

- Recloser Type
- Rated Voltage, kV
- Continuous Current, Amperes
- Rated Short Circuit at Maximum Voltage, Amperes
- Rated Interrupting Time, Hertz
- Rated Reclosing Time, Hertz
- Rated Current, Amperes
- Total Shipping Weight
- Controller/relay details
- Instruction Manual

3.2 ENGINEER'S REVIEW

A. Engineer's review of drawings and manufacturer's data applies only to the general arrangement of equipment and shall not relieve the Seller of the responsibility for correctness of design, details and dimensions. The Engineer shall be allowed fifteen (15) days from the date on which the submittal documents arrive at the Engineer's office to review and return documents. This shall in no way modify the shipment dates as specified unless more than fifteen (15) days are required to review the drawings; in which case, additional time may be added to the date of delivery. Engineer shall return all comments electronically.

3.3 FINAL REVIEW DRAWINGS

A. Electronic PDF copy of final review drawings shall be furnished to the Engineer at least thirty (30) days prior to the arrival of any equipment. The Engineer shall be allowed ten (10) days from the date on which the submittal documents arrive at the Engineer's office to review and electronically return any comments. This shall in no way modify the shipment dates specified unless more than ten

(10) days are required to review the drawings, in which case, additional time may be added to the date of delivery.

3.4 INSTALLATION INSTRUCTION BOOKS

A. Submit three (3) copies of installation instruction books, ten (10) days prior to the arrival of equipment, which describe in detail all necessary steps the owner must follow to adequately install and align equipment.

3.5 ENGINEERING CORRESPONDENCE

A. All engineering submittals and correspondence shall be submitted to:

Bhadresh Patel, Electrical Director
City of Newark
City Municipal Building
220 South Main Street
Newark, DE 19711
Telephone: (302) 366-7000 x2085
Fax: (302) 366-7160

B. All purchasing/invoice correspondence shall be submitted to:

Bhadresh Patel, Electrical Director
City of Newark
City Municipal Building
220 South Main Street
Newark, DE 19711
Telephone: (302) 366-7000 x2085
Fax: (302) 366-7160

3.6 ELECTRONIC DOCUMENTATION

A. Furnish electronic files on CD of all approved final review drawings and literature no later than thirty (30) days after shipment date. Also, submit a copy of all drawings on CAD using AutoCAD Release 2014 or later.

3.7 DELIVERY LOCATION, DELIVERY SCHEDULE AND SHIPMENT NOTIFICATION

A. Delivery Location

- All material shall be delivered to:

  City of Newark
  Central Stores Warehouse
  406 Phillips Avenue
  Newark, DE 19711

B. Delivery Schedule

- Time is of the essence in the performance of this contract. The Seller, by submitting a proposal, agrees to furnish all material specified in this section in accordance with the date(s) specified in the proposal.
- Delivery of the reclosers shall be considered a priority and shall be scheduled as early as possible in the contract.
- The Owner intends on installing the reclosers throughout the 2018 to early 2019 year. Due to limited storage facilities and to optimize warranty start dates, the Seller shall agree to deliver the reclosers in a minimum of three (3) shipments. Shipping dates shall be coordinated with the Owner.

C. Shipment Notification

- The vendor shall notify the Engineer one (1) week in advance of the shipment of material. The vendor shall identify the items being shipped and shall indicate the exact arrival date and approximate arrival time. Material will not be accepted after 2:00 P.M. Material will not be accepted on Saturdays and Sundays or Delaware State or Federal holidays. Material arriving after 2:00 P.M. on Friday will be off-loaded on the following Monday. The vendor shall pay all demurrage charges for any and all material arriving after the acceptable time/date.

3.8 NEW EQUIPMENT

A. All material and equipment shall be new. Used, reconditioned or remanufactured material and equipment will not be allowed.

3.9 WARRANTY

A. A minimum full one (1) year warranty against defects in materials and workmanship shall be furnished. Any standard manufacturer warranties that exceed one (1) year shall be honored by the Seller. The warranty period shall begin on the date the material and equipment arrives at the City of Newark.

3.10 WORK PERFORMED PRIOR TO FINAL SHOP DRAWING REVIEW

A. All fabrication or assembly of equipment prior to receipt of reviewed shop drawings from the Engineer shall be the sole responsibility of the Vendor. Any changes resulting from Shop Drawing review to meet contract documents which requires modification to pre-assembled equipment shall be performed by the Vendor at no additional cost. Delays caused by incorrect pre-assembly will in no way relieve the Vendor from meeting the specified shipment dates.

3.11 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain reclosers.

3.12 RECLOSER TESTING

A. Perform the following tests as a minimum:

- Functional test to assure unit is operating.
- Electrical TCC trip test. (recloser and control)
- High-potential withstand test to determine dielectric strength of the unit.
- Continuity test to assure correct internal control connections.

**PART 4 – OPTIONS**

4.1 STANDARD COMPONENTS

The following shall be included as standard:

- Galvanized steel polemount center bracket
- Lifting provisions
- Grounding provisions
- Operations counter for each phase located in the

control
- Manual trip and lockout handle(s) with mechanical block
- SEL-651R control and associated control cable
- Triple option close capabilities
- Solid dielectric epoxy modules with 6 internal voltage sensors and dual-ratio 1000/500:1 CT's
- Arrester mounting provisions
- Field changeable silicone insulators
- Junction box with all strain relief connections

## 4.2 OPTIONS

The following options shall be supplied:

- NEMA 4-hole aerial lug
- 4/0 brass eyebolt style ground lug
- Stainless steel polemount center bracket with arrester provisions on the load and source side
- High impact, UV stable wildlife protectors for source and load insulators
- Junction box with all twist lock connections
- Six (6) integral voltage sensors
- 42 pin cable with 52B and cable disconnect alarm (minimum 45')

## 4.3 LABELING

### A. Hazard Alerting Signs

Appropriate hazard signs shall be applied to each unit, frame or enclosure (if applicable). A Danger sign shall warn of hazardous voltage and the need for qualified operating personnel. Warning signs shall warn against product misapplication more than fault ratings and the hazards when accessing moving components inside the mechanism housing. Caution signs shall warn of harmful X-ray potential.

### B. Nameplates, Ratings Labels, and Connection Diagrams

Each recloser shall be provided with a nameplate label indicating the manufacturer's name, catalog number, date of manufacture, serial number, and ratings. Ratings listed on nameplate shall indicate the following: voltage rating, BIL, continuous current, and interrupting current.

CITY OF NEWARK
Delaware

CONTRACT NO. 18-06

PURCHASE OF NINE (9) 12KV SOLID DIELECTRIC, TRIPLE OPTION RECLOSERS

PROPOSAL

TO: The Mayor and City Council
Newark, Delaware

FROM: _____

The undersigned as a lawfully authorized agent for the below named Bidder has carefully examined the General Provisions, Special Provisions, Technical Specifications, and Proposal to be known as Contract No. 18-06 and binds himself upon award to him by the Mayor and City Council of Newark, Delaware to execute in accordance with such award, a contract of which contract this Proposal and said General Provisions and any Addenda shall be a part, and to furnish the equipment as specified F.O.B. Newark, Delaware in a manner that is in complete accordance with said General Provisions, Special Provisions, and Technical Specifications, at the following named prices for the items:

| | | BID PROPOSAL OF CONTRACT NO. 18-06<br>COMPANY _____ | | | | |
|---|---|---|---|---|---|---|
| ITEM | QUANTITY | DESCRIPTION | UNIT PRICE | FREIGHT CHARGES | DELIVERY ARO | TOTAL PRICE |
| 1 | 9 | 12KV SOLID DIELECTRIC, TRIPLE OPTION RECLOSERS | | | | |

COMPANY _____

Exceptions: _____

_____

_____

_____

DATE: _____ Bidder/Contractor: _____

BY: _____
Its legally authorized representative

TITLE: _____

STREET ADDRESS: _____

CITY, STATE, ZIP: _____

CITY OF NEWARK
Delaware

CONTRACT NO. 18-06

PURCHASE OF NINE (9) 12KV SOLID DIELECTRIC, TRIPLE OPTION RECLOSERS

BOND TO ACCOMPANY PROPOSAL
(not necessary if certified or cashier's check is used)

KNOW ALL MEN BY THESE PRESENTS THAT _____ of _____ of the County of _____ and State of _____, principal, and _____ of _____ as surety, legally authorized to do business in the State of Delaware, are held and firmly bound unto the City of Newark in the sum of _____ Dollars, to be paid to said City of Newark for use and benefit of the Mayor and Council of Newark, for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators and successors, jointly and severally, for and in the whole, firmly by these presents. Sealed with our seal dated the _____ day of _____ in the year of our Lord, two thousand and eighteen (2018).

NOW THE CONDITIONS OF THIS OBLIGATIONS IS SUCH, that if the above bounded principal who has submitted to said City of Newark, a certain proposal to enter into a certain Contract No. 18-06, Purchase Of Nine (9) 12kv Solid Dielectric, Triple Option Reclosers, and if said shall well and truly enter into and

executes said contract and furnish therewith such Surety Bond or Bonds as may be required by the terms of said contract and approved by said City of Newark, said Contract, and said Bond to be entered into within ten (10) days after the date of official notice of award thereof in accordance with the terms of said proposal, then this obligation to be void, otherwise shall remain in full force and virtue.

| | | |
|---|---|---|
| SIGNED AND SEALED IN THE PRESENCE OF WITNESS: | SIGNED _____ | (SEAL) |
| | BY _____ | (SEAL) |
| _____ | SIGNED _____ | (SEAL) |
| | BY _____ | (SEAL) |